

LOCTITE ABLESTIK 550

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PRODUCT DESCRIPTION

LOCTITE ABLESTIK 550 provides the following product characteristics:

Technology	Epoxy Film
Appearance	Translucent
Cure	Heat cure
Product Benefits	Thermally conductive
Application	Assembly
Adhesive Film Thickness	3 mil
Carrier Type	Glass fabric
Film Thickness	3 to 10mil (1mil carrier) 4 to 10mil (2mil carrier) 8mil (4mil carrier)
pH	9
Surfaces	Gold / Gold-plated and Difficult-to-bond surfaces

LOCTITE ABLESTIK 550 adhesive film is designed for substrate attach and sealing microelectronic packages. This adhesive film gives off methanol, water, and ammonia during cure.

Using LOCTITE ABLESTIK 550 adhesive in hermetically sealed packages is not recommended.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Work Life @ 25°C, days	183
Shelf Life @ -40°C, days	365
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

30 minutes @ 150°C

Alternate Cure Schedule

2 hours @ 125°C

Percent Volatiles

10 x 10cm sample @ 120°C for 20 minutes, % 0.43

Curing film adhesives under pressure to ensure proper wetting of the adherend surfaces is recommended. Pressure requirements will vary from (2 to 200 psi) depending on the severity of the adherends warpage and the stiffness of the adherends. Temperatures are recommended are at the bondline.

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Coefficient of Thermal Expansion ppm/°C:

Below Tg	95
Above Tg	480

Glass Transition Temperature, °C 105

Thermal Conductivity @ 121°C, W/(m-K) 0.2

Tensile Modulus, DMTA :

@ -65 °C	N/mm ² 4,207
	(psi) (610,000)
@ 25 °C	N/mm ² 3,793
	(psi) (550,000)
@ 150 °C	N/mm ² 2,200
	(psi) (319,000)
@ 250 °C	N/mm ² 1,517
	(psi) (220,000)

Extractable Ionic Content, @ 100°C ppm:

Chloride (Cl-)	45
Sodium (Na+)	10
Potassium (K+)	1

Water Extract Conductivity, μmhos/cm 220

Weight Loss @ 300°C, % 1.1

Moisture Absorption @ Saturation, wt.% 2.2

@ 85°C/85%RH

Electrical Properties

Volume Resistivity, ohms-cm	1×10 ¹⁴
Dielectric Strength, volts/μm	1360/25
Dielectric Constant @ 1kHz	4.8
Dissipation Factor @ 1kHz	0.015

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Lap Shear Strength :

Al to Al with 1.27cm overlap @ 25°C	N/mm ² 39
	(psi) (5,700)
Au to Au with 1.27cm overlap @ 25°C	N/mm ² 37
	(psi) (5,300)

GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

THAWING:

1. Allow material to reach room temperature before use.
2. DO NOT open the package before contents reach ambient temperature.
3. Any moisture that collects on the thawed package should be removed prior to opening the package.

DIRECTIONS FOR USE

1. Place precut adhesive film between clean surfaces to be bonded.
2. Assemble components.
3. Apply spring loaded clamp or dead weight to provide continuous pressure of at least 2 to 10 psi during cure cycle.
4. Place assembly in a preheated oven and cure at the recommended cure schedule.

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

Storage

LOCTITE ABLESTIK film products can be stored at -40°C for up to one year. The shelf life of the film is only valid when the material has been stored at the specified storage conditions. Incorrect storage conditions will degrade the performance of the material in final cured properties. Avoid flexing film when frozen.

Disclaimer

Note

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} = \text{N/mm}^2$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

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Reference 0.2